

## ABSTRACT

A mobile communication system includes M transmission antennas, P encoders for receiving P information bit streams and encoding the received 5 information bit streams with a space-time trellis code (STTC), and M modulators for modulating information bit streams output from the P encoders in a predetermined modulation scheme and outputting modulation symbol streams. A sequence used for channel estimation is generated, and the sequence is transmitted in substitute for at least one modulation symbol in a predetermined 10 position through the M transmission antennas, for each of the modulation symbol streams output from the M modulators.